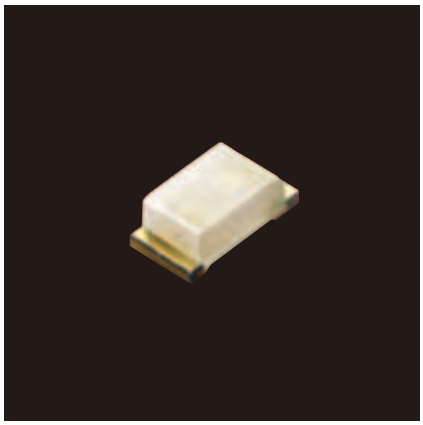
ROHM SEMICONDUCTOR

Data Sheet



SML-51 Series

1608(0603)
1.6×0.8mm(t=0.55mm)

Features

・Original device technology enables high brightness and high reliability
・High reliability due to the wide operation temperature(-40℃ to +100℃) (SML-512(A) Series)

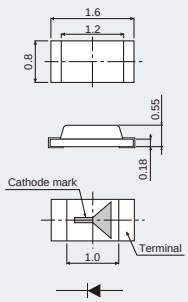
Color Type: V U C D / W M P B

Specifications

Part No.	Chip Structure	Emitting Color	Absolute Maximum Ratings (Ta=25℃)						Electrical and Optical Characteristics (Ta=25℃)										
			Power Dissipation PD(mW)	Forward Current IF(mA)	Peak Forward Current IFP(mA)	Reverse Voltage VR(V)	Operating Temperature Topr(℃)	Storage Temperature Tstg(℃)	Forward Voltage VF Typ. (V)	VF IF(mA)	Reverse Current IR Max. (μA)	IR VR(V)	Dominant Wavelength λD Min.*3 (nm)	Typ. (nm)	Max.*3 (nm)	IF(mA)	Luminous Intensity Iv Min. (mcd)	Typ. (mcd)	IF(mA)
SML-512VW(A)	AlGaInP on GaAs	Red	75	30	100*2	5	-40 to +100	-40 to +100	2.0	20	10	5	626	630	636	20	35.5	56	20
SML-512VW																	22	63	
SML-512UW													619	624	629				
SML-511UW			62	25	60*1	4	-30 to +85	-40 to +85			100	4	615	620	625		14	40	
SML-512CW(A)		Orange	75	30	100*2	5	-40 to +100	-40 to +100			10	5	600	603	606		71	112	
SML-512DW													603	606	609		36	100	
SML-511DW			62	25	60*1	4	-30 to +85	-40 to +85			100	4	602	605	608		14	40	
SML-512WW		Yellow	75	30	100*2	5	-40 to +100	-40 to +100			10	5	587	590	593		36	63	
SML-511WW			62		60*1	4	-30 to +85	-40 to +85				4					22	40	
SML-512MW		Yellowish Green	65	25	100*2	5	-40 to +100	-40 to +100	2.1		100	5	567	570	575		14	14	
SML-512PW(A)		Green											557	560	563		5.6		
SML512BC5T	InGaN	Blue	66	20					2.9	5			464	470	476	5		16	5

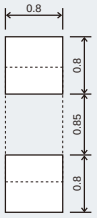
*1:Duty1/5, 200Hz / *2:Duty1/10, 1kHz / *3:Reference

Dimensions



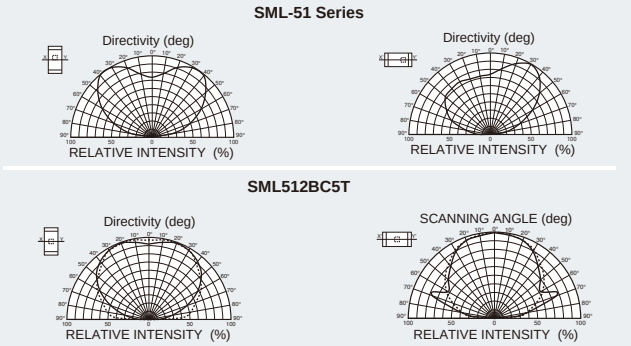
Tolerance : ±0.1
(unit : mm)

Recommended Solder Pattern



(unit : mm)

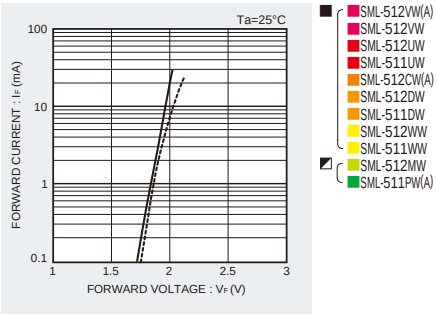
Viewing Angle

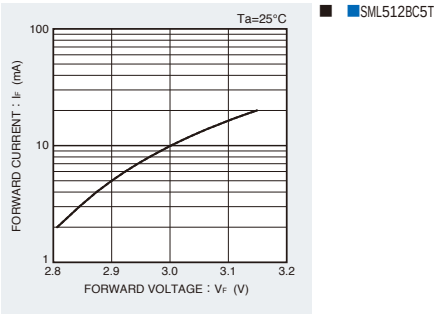


© 2011 ROHM Co., Ltd. All rights reserved.

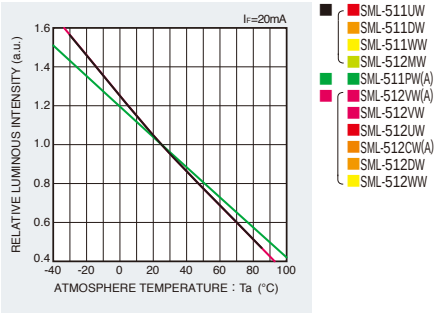
Electrical Characteristics Curves

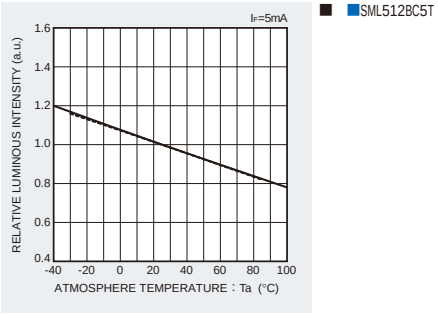
Forward Current-Forward Voltage



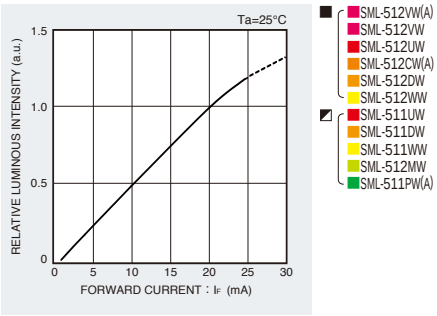


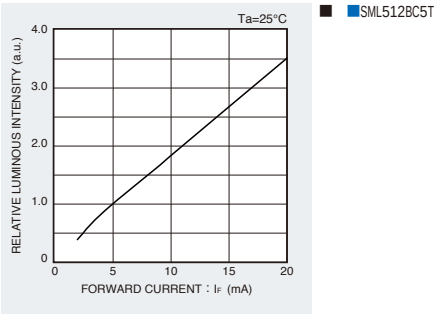
Luminous Intensity-Atmosphere Temperature



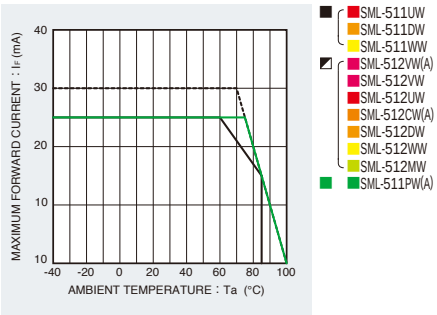


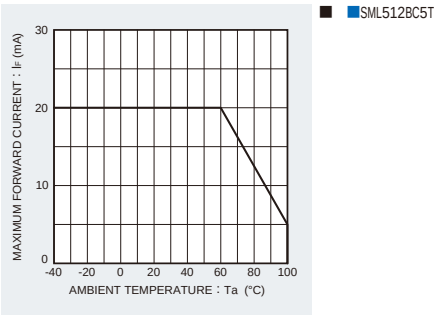
Luminous Intensity-Forward Current





Derating





© 2011 ROHM Co., Ltd. All rights reserved.

Rank Reference of Brightness

Red (V, U)

(Ta=25°C, IF=20mA)

	Package size(mm)	Luminous Intensity (mcd) / Height(mm)	J	K	L	M	N	P	Q	R	S	T
			2.5 to 4.0	4.0 to 6.3	6.3 to 10	10 to 16	16 to 25	25 to 40	40 to 63	63 to 100	100 to 160	160 to 250
Mini-mold Chip LEDs	1608	0.55						SML-512VW※				
							SML-511UW※					
								SML-512UW※				

Orange (D)

(Ta=25°C, IF=20mA)

	Package size(mm)	Luminous Intensity (mcd) / Height(mm)	J	K	L	M	N	P	Q	R	S	T
			2.5 to 4.0	4.0 to 6.3	6.3 to 10	10 to 16	16 to 25	25 to 40	40 to 63	63 to 100	100 to 160	160 to 250
Mini-mold Chip LEDs	1608	0.55					SML-511DW※					
									SML-512DW※			

Yellow (W)

(Ta=25°C, IF=20mA)

	Package size(mm)	Luminous Intensity (mcd) / Height(mm)	J	K	L	M	N	P	Q	R	S	T
			2.5 to 4.0	4.0 to 6.3	6.3 to 10	10 to 16	16 to 25	25 to 40	40 to 63	63 to 100	100 to 160	160 to 250
Mini-mold Chip LEDs	1608	0.55						SML-511WW※				
									SML-512WW※			

Green (M)

(Ta=25°C, IF=20mA)

	Package size(mm)	Luminous Intensity (mcd) / Height(mm)	J	K	L	M	N	P	Q	R	S	T
			2.5 to 4.0	4.0 to 6.3	6.3 to 10	10 to 16	16 to 25	25 to 40	40 to 63	63 to 100	100 to 160	160 to 250
Mini-mold Chip LEDs	1608	0.55					SML-512MW※					

Blue (B)

(Ta=25°C, IF=5mA)

	Package size(mm)	Luminous Intensity (mcd) / Height(mm)	J	K	L	M	N	P	Q	R	S	T
			2.2 to 3.6	3.6 to 5.6	5.6 to 9.0	9 to 14	14 to 22	22 to 36	36 to 56	56 to 90	90 to 140	140 to 220
Mini-mold Chip LEDs	1608	0.55			SML-512BC5T							

※Brightness on specification sheet include tolerance of within ±10%.

SML-512(A)

(Ta=25°C, IF=20mA)

	Package size(mm)	Luminous Intensity (mcd) / Height(mm)	AE	AF	AG	AH	AJ	AK	AL	AM	AN	AP	AQ	AR	AS	AT	AU	AV
			5.6 to 7.1	7.1 to 9.0	9.0 to 11.2	11.2 to 14	14 to 18	18 to 22.4	22.4 to 28	28 to 35.5	35.5 to 45	45 to 56	56 to 71	71 to 90	90 to 112	112 to 140	140 to 180	180 to 224
Mini-mold Chip LEDs	1608	0.55									SML-512VW(A)							
														SML-512CW(A)				
			SML-512PW(A)															

＊Please note that the brightness of some products may fall between ranks (half rank).

Part No. Construction

＊"–" will be taken out for emitting color B series.

Special Code will be applied for Emitting color W/B/E series.

(Special Code)

S	M	L	–	5	1	2	V	8	T	T	8	6	A	P
Series name				Package type		Chip Type	Emitting Color		Resin Color	Taping Specifications			Rank sign (Brightness Rank)＊	

1	Low Current Type
2	High Brightness Type

V	Red:630nm
U	Red:620nm
C	Orange:603nm
D	Orange:605nm
W	Yellow:590nm
M	Yellowish-Green:572nm
P	Green:560nm
B	Blue:470nm

T	Transparent Colorless
W	MilkyWhite

T86	Cathode at sprocket hole side
T87	Reverse of T86
1	For white LED, cathode at sprocket hole side

＊Concerning the Brightness rank
- Please refer to the rank chart above for luminous intensity classification.
- Part name is individual for each rank.
- When shipped as sample, the part name will be a representative part name. General products are free of ranks. Please contact sales if rank appointment is needed.

Packing Specification

ROHM LED products are being shipped with desiccant (silica gel) concluded in moisture-proof bags.
Pasting the moisture sensitive label on the outer surface of the moisture-proof bags or enclosing the humidity indication card inside the bag is available upon request.
Please contact the nearest sales office or distributer if necessary.

© 2011 ROHM Co., Ltd. All rights reserved.

Notes

No copying or reproduction of this document, in part or in whole, is permitted without the consent of ROHM Co.,Ltd.

The content specified herein is subject to change for improvement without notice.

The content specified herein is for the purpose of introducing ROHM's products (hereinafter "Products"). If you wish to use any such Product, please be sure to refer to the specifications, which can be obtained from ROHM upon request.

Examples of application circuits, circuit constants and any other information contained herein illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.

Great care was taken in ensuring the accuracy of the information specified in this document. However, should you incur any damage arising from any inaccuracy or misprint of such information, ROHM shall bear no responsibility for such damage.

The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM and other parties. ROHM shall bear no responsibility whatsoever for any dispute arising from the use of such technical information.

The Products specified in this document are intended to be used with general-use electronic equipment or devices (such as audio visual equipment, office-automation equipment, communication devices, electronic appliances and amusement devices).

The Products specified in this document are not designed to be radiation tolerant.

While ROHM always makes efforts to enhance the quality and reliability of its Products, a Product may fail or malfunction for a variety of reasons.

Please be sure to implement in your equipment using the Products safety measures to guard against the possibility of physical injury, fire or any other damage caused in the event of the failure of any Product, such as derating, redundancy, fire control and fail-safe designs. ROHM shall bear no responsibility whatsoever for your use of any Product outside of the prescribed scope or not in accordance with the instruction manual.

The Products are not designed or manufactured to be used with any equipment, device or system which requires an extremely high level of reliability the failure or malfunction of which may result in a direct threat to human life or create a risk of human injury (such as a medical instrument, transportation equipment, aerospace machinery, nuclear-reactor controller, fuel-controller or other safety device). ROHM shall bear no responsibility in any way for use of any of the Products for the above special purposes. If a Product is intended to be used for any such special purpose, please contact a ROHM sales representative before purchasing.

If you intend to export or ship overseas any Product or technology specified herein that may be controlled under the Foreign Exchange and the Foreign Trade Law, you will be required to obtain a license or permit under the Law.

ROHM SEMICONDUCTOR

Thank you for your accessing to ROHM product informations.
More detail product informations and catalogs are available, please contact us.

ROHM Customer Support System

http://www.rohm.com/contact/

© 2011 ROHM Co., Ltd. All rights reserved.